

AMENDMENTS TO THE DRAWINGS

Please substitute the attached replacement sheet for Figure 46.

REMARKS**Status of the Claims**

Claims 1-20 are currently present in the Application, and claims 1, 9, and 17 are independent claims. Claims 1, 3-7, 11, 12, 15, and 17-20 have been amended in this Response. Support for the amendments is found, for example, in Applicants' specification on pages 3-4, page 52, line 23 through page 54, line 7 (also see Figure 46), page 62, lines 8-18, and page 63. No new matter has been added as a result of these amendments.

Allowed Claims

Applicants wish to thank the Examiner for allowing claims 9-16.

Drawings

Applicants note with appreciation the Examiner's acceptance of Applicants' formal drawings, filed with the Application on September 25, 2003. Applicants hereby submit a replacement sheet for Figure 46. The replacement sheet fixes several inadvertent typographical errors. Note that the specification has been amended to correspond to corrected Figure 46. No new matter has been added.

Claim Rejections Under 35 U.S.C. § 112

Claims 17-20 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants respectfully traverse the rejections under 35 U.S.C. § 112.

Applicants have amended claims 17-20 to clarify that Applicants claim a computer program product stored on a computer readable medium, and that the computer readable medium contains instructions for execution by a computer, which, when executed by the computer, cause the computer to implement the claimed method. Based on these amendments, Applicants respectfully submit that claims 17-20 are not

indefinite, and respectfully request that the Examiner remove the rejections under 35 U.S.C. § 112.

Claim Rejections Under 35 U.S.C. § 101

Claims 1-8 and 17-20 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Claims 17-20 are further rejected under 35 U.S.C. § 101 as being directed to a computer program product on a computer operable media. Applicants respectfully traverse the rejections under 35 U.S.C. § 101.

As an initial matter, and as noted above, Applicants have amended claims 17-20 to clarify that Applicants claim a computer program product stored on a computer readable medium, and that the computer readable medium contains instructions for execution by a computer, which, when executed by the computer, cause the computer to implement the claimed method.

In addition, Applicants have amended independent claims 1 and 17 to clarify that Applicants are claiming “efficiently sharing data in an information handling system including a plurality of heterogeneous processors.” In other words, Applicants are not merely claiming the solving of a set of linear equations, but rather, a method and computer program product for efficiently sharing data when using a computer system that includes a plurality of heterogeneous processors. Applicants are not claiming the mere manipulation of data, but instead claim specific steps that are performed by specifically claimed processors. For example, as claimed by Applicants in independent claims 1 and 17, the coefficients are divided “into a plurality of coefficient blocks, stored in the common memory, ***using the one or more first processors.***” An available secondary processor is then identified, and ***the available secondary processor*** transfers “the selected coefficient block from the common memory to a local memory using a direct memory access operation.” The selected coefficient block is processed “***using the available secondary processor,*** the processing resulting in a sub-result.” The ***secondary processor*** then stores the sub-result in the common memory, i.e. the common memory that is “***accessible by the first processors and by the secondary***

processors, by reading the sub-result from the common memory.” This storing is also performed by the secondary processor using a direct memory access operation.

As noted in Applicants’ specification, the use of a common memory, and the sharing of processing amongst secondary processors, avoids the inefficient transmission of large amounts of data in the system. In particular, the claimed use of direct memory access operations by the available secondary processor significantly reduces the amount of data that is transmitted in the system. As specifically described in Applicants’ specification on page 62, lines 8-18, the SPUs, i.e. the secondary processors, access the common memory through a direct memory access unit (also see Figure 46 and its corresponding description in Applicants’ specification). As noted in the specification, this means that the result is accessible by the PU, i.e. the first processor, as well as by the other SPUs, i.e. the other secondary processors, and there is no need to transmit the result to the PU or to the other SPUs. This is a practical application, with a useful, concrete, and tangible result. Applicants specifically teach and claim a) sharing a common memory, b) sharing processing tasks amongst secondary processors (as directed by one or more first processors), and c) using direct memory access operations by the secondary processors. This results in a real-world practical result, i.e. the efficient sharing of data in an information handling system with a plurality of heterogeneous processors, in order to avoid the transmission of large amounts of data in the system.

For the reasons set forth above, Applicants respectfully submit that independent claims 1 and 17, and the claims which depend from them, are directed to statutory subject matter, and respectfully request that they be allowed.

Conclusion

As a result of the foregoing, it is asserted by Applicants that the remaining claims in the Application are in condition for allowance, and Applicants respectfully request an early allowance of such claims.

Applicants respectfully request that the Examiner contact the Applicants' attorney listed below if the Examiner believes that such a discussion would be helpful in resolving any remaining questions or issues related to this Application.

Respectfully submitted,

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